APPENDIX A

Responsiveness Summary

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Responsiveness Summary

OVERVIEW

Operable Unit (OU) 1-07B is located within Waste Area Group (WAG) 1 of the Test Area North (TAN) facility at the Idaho National Engineering Laboratory (INEL). As described in the Record of Decision (ROD), the unit comprises the Technical Support Facility (TSF) Injection Well (TSF-05) and the Surrounding Groundwater Contamination (TSF-23). Site evaluations of several No Action Sites (OUs 1-01, 1-02, 1-06, and 1-09) are also included in this ROD. A Proposed Plan was released May 1, 1994, setting forth the agencies' proposed alternative for remediating contamination at these units. A public comment period was held from May 18, 1994, to June 18, 1994, during which the public was asked to comment on the agencies' proposed treatment alternative for the OU 1-07B. The Proposed Plan for OU 1-07B recommended continuing use of the extraction and treatment system built for the interim action, implementing institutional controls and groundwater monitoring, extracting and treating all groundwater with trichloroethene (TCE) concentrations greater than 5,000 μg/L and implementing an enhanced extraction technology on hotspot contaminants in the vicinity of the TSF-05 injection well. The Proposed Plan for the remaining units recommended no action because evaluations conducted at the units indicated either that there was no evidence of contaminants at the site or that the low levels of contamination at the site did not pose an unacceptable risk to human health or the environment.

This Responsiveness Summary recaps and responds to significant comments received during the public comment period for this ROD. Generally, the comments received reflected a broad range of views. One person commenting on TSF-05 suggested an alternative which is now being considered by the agencies: because the only unacceptable risk to future populations was to potential future residents exposed to groundwater pumped directly from the TSF-05 Injection Well, the commentor advocated rendering this scenario impossible by filling the well with bentonite and capping the wellhead with concrete. The feasibility of a grouting option is being examined. A detailed discussion of this and other significant comments received during the public comment period on the Proposed Plan and the agencies' responses to them are contained below.

Background on Community Involvement

To initiate the TAN Groundwater Contamination and No Action Site investigations, public scoping meetings were held on February 4, 5, and 6, 1992, in Idaho Falls, Boise, and Burley, Idaho respectively. Approximately 35 people attended the meetings. These meetings were designed to involve the public early in the investigation; to explain the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) process; and to allow representatives from the U.S. Department of Energy (DOE) and INEL to discuss the project, answer both written and oral questions, and receive ideas and suggestions from the public. The public comment period on the interim action was initially scheduled from January 13, 1992, to February 12, 1992. A request for extension of the public comment period was received and granted, extending the comment period to March 13, 1992. The scoping meetings and interim action Proposed Plan were announced via a fact sheet conveyed through a "Dear Citizen" letter mailed January 8, 1992, to a mailing list of 5,731 groups and individuals. On January 5, 1992, and again on January 30, 1992, DOE, Idaho Operations Office (DOE-ID) issued a news release announcing the Notice of Availability of the interim action Proposed Plan. The Notice of

Availability for the Proposed Plan was published January 5, 1992, in eight major Idaho newspapers: the *Post Register* in Idaho Falls, the *Idaho State Journal* in Pocatello, the *South Idaho Press* in Burley, the *Times News* in Twin Falls, the *Idaho Statesman* in Boise, the *Idaho Press Tribune* in Nampa, the *Lewiston Morning Tribune* in Lewiston, and the *Idahonian* in Moscow. A similar newspaper advertisement was published January 30, 1992, reminding the public of the upcoming meetings and encouraging citizens to attend and provide oral or written comments.

The letter, the interim action Proposed Plan, and the news release gave notice to the public that the TSF Injection Well and Surrounding Groundwater Contamination documents would be available before the beginning of the comment period in the Administrative Record section of the INEL Information Repositories located in the INEL Technical Library of Idaho Falls, as well as in city libraries in Idaho Falls, Pocatello, Twin Falls, Boise, and Moscow. The letter and release notified the public of the various ways in which they could participate in the investigations and decision-making process.

Personal telephone calls concerning the availability of TSF Injection Well and Surrounding Groundwater Contamination documents and public meetings were made to key individuals, environmental groups, and organizations by the INEL Outreach Office staff in Pocatello, Twin Falls, and Boise. Calls were also made to community leaders in Idaho Falls and Moscow by INEL Community Relations Program staff in Idaho Falls and Boise.

During the meetings that followed, representatives from DOE-ID and INEL discussed the project, answered questions, and received public comments. Forms for written comments were distributed at the meetings and the audience was encouraged to comment on the project. Comments received during the public scoping period on the interim action Proposed Plan were evaluated and considered as part of the Remedial Investigation (RI)/Feasibility Study (FS) process.

Regular reports concerning the status of the TSF Injection Well and Surrounding Groundwater Contamination project were included in the *INEL Reporter* and mailed to individuals who attended the meetings or who were on the INEL mailing list. Reports appeared in the March, June, and October 1993 issues of the *INEL Reporter*.

When the RI/FS was complete, a Notice of Availability for the TSF Injection Well and Surrounding Groundwater Contamination and No Action Sites Proposed Plan was published in April 1994 in the *Post Register* (Idaho Falls), the *Idaho State Journal* (Pocatello), the *South Idaho Press* (Burley), the *Times News* (Twin Falls), the *Idaho Statesman* (Boise), the *Lewiston Morning Tribune* (Lewiston), the *Idaho Free Press* (Nampa), and *The Daily News* (Moscow). A second advertisement was placed in the same newspapers several days before each open house or meeting to remind citizens of the opportunity to attend the meetings and provide oral or written comments. Radio stations in Idaho Falls, Blackfoot, Pocatello, Burley, and Twin Falls ran advertisements during the three days before the open houses at the Pine Ridge Mall in Pocatello and the INEL office in Twin Falls.

The Proposed Plan for the ROD of the TSF Injection Well and Surrounding Groundwater Contamination and No Action Sites was mailed May 1, 1994, to the 5,600 groups and individuals on the mailing list. Copies of the Proposed Plan and the entire Administrative Record are available to the public in six regional INEL information repositories: the INEL Technical Library in Idaho Falls; INEL offices in Idaho Falls, Pocatello, Twin Falls, and Boise; the University of Idaho Library in Moscow; and the Shoshone-Bannock Library in Fort Hall. The original

documents composing the Administrative Record are located at the INEL Technical Library; copies of the originals are located in the five other repositories.

The public comment period on the Proposed Plan for the TSF Injection Well and Surrounding Groundwater Contamination and No Action Sites was held from May 18, 1994, to June 18, 1994. No requests for extensions were received. Prior to the release of the Proposed Plan, a teleconference was held among the League of Women Voters of Moscow, the Environmental Defense Institute, DOE-ID, U.S. Environmental Protection Agency (EPA), and Idaho Department of Health and Welfare (IDHW). The participants discussed INEL environmental restoration issues and the TSF Injection Well and Surrounding Groundwater Contamination and No Action Sites. The format of the teleconference allowed the Moscow residents to ask questions and receive answers from the agency personnel about these issues.

Public meetings were held June 6, 8, and 9, 1994, in Idaho Falls, Boise, and Moscow, respectively. Approximately 35 people attended the three meetings. Representatives from DOE-ID, EPA Region X, and IDHW were present at the public meetings in Idaho Falls and Boise to discuss the project, answer questions, and receive public comments. Members of DOE-ID and IDHW were present at the public meetings in Moscow. For one half-hour before each meeting representatives from the agencies were available for informal discussions with the interested public. The meetings were conducted in two sections: the first discussed the proposed remedial action alternative for the TSF Injection Well and Surrounding Groundwater Contamination; the second discussed the TAN No Action sites. These two sections of the meeting were further divided into informal question and answer periods, followed by formal comment periods. The entirety of each public meeting was recorded by a court reporter; transcripts of the meetings have been placed in the Administrative Record. A fact sheet was sent to the public in January 1995 to provide citizens with updated information on the TSF-05 Interim Action and subsequent impacts to the preferred alternative selected for OU 1-07B.

This Responsiveness Summary has been prepared as part of the ROD. All oral comments, as given at the public meetings, and all written comments are repeated verbatim in the Administrative Record for the ROD. Thirteen people submitted written comments on the TSF Injection Well and Surrounding Groundwater Contamination and No Action sites proposal and four people gave oral comments at the public meetings. To more fully respond to each issue raised in the comments, DOE divided the comments received into 77 separate comments. The comments received were coded to indicate which response in the Responsiveness Summary addresses the comment. It should be noted that in appropriate instances, the Responsiveness Summary groups similar comments, summarizes them, and provides a single response. The ROD presents the preferred alternative for the TSF Injection Well and Surrounding Groundwater Contamination and No Action sites at the Radioactive Waste Management Complex (RWMC), selected in accordance with the CERCLA, as amended by the Superfund Amendments and Reauthorization Act and, to the extent practicable, the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). The decision for this OU is based on information contained in the Administrative Record.

Summary of Comments Received and Agency Responses

Comments and questions raised during the public comment period on the TAN Groundwater and No Action Sites Proposed Plan are summarized below. Several questions were answered during the informal question-and-answer period during the public meetings on the Proposed Plan. This Responsiveness Summary does not attempt to summarize or respond to the issues and concerns raised during that part of the public meeting. Complete transcripts of the

meetings, including the agencies' responses to these informal questions are contained in the Administrative Record.

Comments and questions on a variety of subjects not specific to the TAN Groundwater and No Action Sites Proposed Plan were submitted during the public comment period. The agencies take public comments very seriously and have made every attempt to respond to all comments. Some comments, however, are beyond the scope of the TAN Groundwater and No Action Sites Proposed Plan (i.e., statements of distrust for the nuclear industry, restatements of parts of the Proposed Plan, questions on contaminants not present at the site). While these comments are summarized and grouped at the end of the Responsiveness Summary, the agencies have not attempted to respond to these out-of-scope comments. Additional information on these topics can be obtained from the INEL Public Affairs Office in Idaho Falls; the local INEL offices in Pocatello, Twin Falls, and Boise; and the Environmental Restoration Information Office in Moscow. Comments and questions regarding community participation were referred to the INEL Community Relations Coordinator and will be addressed during updates to the Community Relations Plan. Formal comments and questions on the TAN Groundwater Contamination and No Action Sites Proposed Plan submitted during the public comment period are answered below.

COMMENTS PERTAINING TO TSF INJECTION WELL AND SURROUNDING GROUNDWATER CONTAMINATION (OU 1-07B)

Public Participation

1. **Comment:** Two commentors' complimented the agencies on the significant improvements in public literature being published in association with the remediation activities at the INEL. Further, they appreciated the more open way in which information is being provided by the agencies. (T3-1, T4-1)

   Response: The agencies appreciate the commentors' statements. The agencies are committed to providing open access to the decision-making process and to continuously improving the clarity of the documents produced as part of their Federal Facilities Agreement/Consent Order (FFA/CO).

2. **Comment:** One commentor asked to be provided with additional information about the proposed injection of treated groundwater to the aquifer. (W11-2)

   Response: The selected alternative involves reinjection of treated groundwater to the aquifer both in the dissolved phase plume and at the hotspot. In the plume, volatile organic compounds (VOCs) dissolved in groundwater will be treated to less than maximum contaminant levels (MCLs) or 10^{-4} to 10^{-6} risk-based concentrations and returned to the aquifer through a series of new injection wells. At the hotspot, groundwater treatment will occur in a zone of hydraulic containment. Contaminated groundwater will be extracted at TSF-05 or a nearby downgradient well, treated, and reinjected at the upgradient portion of the hotspot. The extracted water will be treated, at a minimum, to reduce VOC concentrations to less than MCLs or to within the acceptable risk range if MCLs do not exist. Radionuclides in the extracted water at the hotspot will be treated to less than MCLs, or risk-based values, or to the extent practicable as determined by the agencies.

   In addition, treatability studies will be conducted on two innovative in situ treatment technologies: bioremediation and chemical oxidation. If treatability testing of either of

these technologies progresses to field scale, substances will be injected to the aquifer to test the technology's ability to aid the remediation effort. In situ oxidation involves adding oxidant to chemically degrade VOCs. In situ bioremediation generally involves adding nutrients to enhance growth of microorganisms that are responsible for degrading VOCs. In situ bioremediation may also involve addition of microorganisms to the aquifer to aid the degradation process. The effects of each of these substances on TAN groundwater will first be tested and evaluated at bench-scale. If field-scale tests are implemented, effects to the aquifer will be carefully monitored.

Risk Assessment

3. **Comment:** One commentor stated that there is no evidence the ecological risks from the remediation activities were considered in the evaluation of alternatives. He contended that, in many cases, remediation activities designed to reduce human health risks impose unacceptable ecological risks. In this case, facility construction and the disturbance to animal populations from operation of the facilities impose risks on local populations. He stated that these factors should be considered in the remediation activity. (W4-1)

Response: It is true that ecological risks (as the term is used by the commentor) to animal populations from remediation activities were not specifically addressed in the Proposed Plan or the RI/FS. However, the types of activities proposed (extraction/injection well drilling, aboveground treatment, etc.) do not involve a great deal of disturbance to the surrounding area and are not anticipated to have a significant impact on local animal populations. The treatment facility will be constructed within the TSF in an area that has had historically high levels of activity (i.e., already been disturbed). The agencies believe that the remediation activity at this site will not impose unacceptable ecological risks.

Impacts to the environment that would be unavoidable during the implementation of Alternative 4 will include disturbances to soils associated with well installation and the layout of equipment supporting the enhanced extraction technologies and groundwater treatment systems. The equipment layout will include the placement of a concrete pad and enclosure (e.g., metal building) to support the different unit operations for long-term operation. Overall, activities associated with this alternative will not pose an irreparable threat nor a significant negative impact to site flora and fauna at TAN; no rare or endangered plants nor suitable habitats for endangered animal species or species of special concern to the Idaho Department of Fish and Game will be impacted. In addition, no other environmentally sensitive elements—such as archaeological or historical sites, wetlands, or critical habitats—will be impacted.

The RI report contains an ecological risk assessment. This ecological risk assessment, although cursory, provides a conservative estimate of the contaminants of concern introduced into the food web. This ecological risk assessment is based on conservative and general assumptions, and only one exposure route (ingestion) for one receptor (rodent). The calculated risk from organic contaminants to a primary consumer is orders of magnitude below Lowest Observable Adverse Effects Levels lending confidence that actual risk to ecological receptors would also be insignificant.Implementing Alternative 4 will not create exposure to radionuclides for ecological receptors because evaporation ponds will not be used. The quantitative ecological risk assessment for the WAG 1 Comprehensive RI/FS will more fully address ecological receptors.

General Comments on the Proposed Alternatives

4. **Comment:** One commentor asked, "What if the remedial action objective (RAO) changed during Phase 1?" Further, he asked, "After Phase 1, what if you find that progress towards achieving the RAO is minimal?" (W1-2, W1-3)

   Response: RAOs are goals set for protecting human health and the environment. The way RAOs are achieved may change as a result of treatability testing (described in Section 9) but they will remain protective of human health and the environment. If the treatability studies result in a significant change to the remedy, the agencies will provide information to the public. Depending on the extent of the change to the remedy, the agencies will either issue an Explanation of Significant Difference or will issue a revised Proposed Plan (with a new public comment period) and amend this ROD accordingly.

   The comment also referred to RAOs for Phase 1 (enhanced extraction technologies), that had been intended to help remove the secondary source of contamination at the hotspot. The commentor asked what would be done if use of enhanced extraction technologies made minimal progress toward removing the hotspot. As described in Section 9 of the ROD, the agencies have reevaluated the Preferred Alternative described in the Proposed Plan, and as a result, have removed the proposal to use enhanced extraction technologies (formerly the focus of Phase 1). The selected remedy described in this ROD focuses on removing as much of the secondary source as practical in Phase A (i.e., surging and stressing well TSF-05). If the secondary source is not removed through Phase A, any residual will be contained and prevented from further leaching through Phase B. The agencies will evaluate the success of the selected remedy within 5 years, and at least every 5 years thereafter until contaminant concentrations drop below MCLs or other risk-based levels.

5. **Comment:** One commentor said that it "seems like [the agencies] might want to review the entire approach rather than continuing pumping." (W1-4)

   Response: The agencies agree with the commentor and have reevaluated the remedial alternatives in light of new information that became available in the year since the proposed plan was issued. As a result of this process, the agencies have chosen Alternative 4 as the selected remedy rather than Alternative 3 (which was identified as the preferred alternative in the Proposed Plan). Among the new information considered, the agencies have found that the groundwater pumping rates estimated in the Proposed Plan are overly conservative, thereby excessively inflating the costs of remediation. On the basis of reduced pumping rates now considered adequate for Alternative 4, the total cost of this alternative is estimated at $29,888,000. In light of this and other new information considered, the agencies have determined that Alternative 4 satisfies the CERCLA evaluation criteria better than Alternative 3. A complete description of the selected remedy is presented in Section 9 of this ROD.

   In addition, the agencies will evaluate the success of the selected remedy within 5 years, and at least every 5 years thereafter until contaminant concentrations drop below MCLs or risk-based levels. Any new information generated by the remedial action will be evaluated during these periodic reviews.

6. **Comment:** One commentor simply stated that the groundwater should be cleaned up as quickly as possible. (W5-1)

Response: The agencies agree with the commentor. The National Contingency Plan which is the implementing regulation for CERCLA requires that TAN groundwater restoration occurs within a reasonable timeframe. Furthermore, the National Contingency Plan delineates the Groundwater Protection Strategy which will be followed during the course of remedial action for TAN groundwater. The Groundwater Protection Strategy requires that both current and potential future use of the groundwater be considered in remedy selection, and that groundwater resources be protected and restored if necessary and practicable. Therefore the agencies have determined that a reasonable timeframe for aquifer restoration to drinking water standards should not exceed 100 years. The 100-year timeframe is consistent with current INEL land use assumptions. The estimated time frame required for remediation under the preferred alternative is 30 years and is not to exceed 100 years. The preferred alternative will be implemented in a phased approach because of the complexity of the contaminants and aquifer system. The actual length of time necessary to remediate the hotspot and the 25-μg/L groundwater plume is largely dependent upon the success of each phase.

7. **Comment:** One commentor suggested that, because the only unacceptable risk identified in the baseline risk assessment was to a future resident who ingests drinking water taken from the vicinity of the TSF Injection Well, it was suggested that this scenario could be rendered impossible by filling the well with bentonite, capping the wellhead with concrete, and covering a 1-acre area around the well shaft with 2- to 4-in. size basalt cobble 10 ft deep. He estimates the cost of this suggestion at approximately one million dollars. (W8-2)

Response: The scenario envisioned by the commentator is a more aggressive variation of proposed Alternative 2: Limited Action Consisting of Institutional Controls. The problem with Alternative 2 and the scenario suggested by the commentator is that it leaves the groundwater untreated and does not prevent future resident exposure to the large downgradient plume with higher risks than is acceptable under Federal and State drinking water standards. To prevent this exposure it is necessary to contain and/or remove the source of contamination. Grouting may have value in the context of another alternative to inhibit contaminant migration. The agencies agree that treatment or containment is necessary to return the aquifer to beneficial use within 100 years and alternatives that do not provide for treatment or containment of groundwater are unacceptable.

8. **Comment:** One commentor stated that due to decreased replenishment (drought) and increased use (irrigation, etc.), the water table has dropped. (W9-3)

Response: In the past 5 years the average depth of the water table beneath the INEL has dropped. In some places, the level has dropped about 10 ft, from approximately 210 to 220 ft below the surface. The water table below TAN ranges in depth from approximately 206 to 210 ft below the surface. As the commentor stated, this decline in the top level of the aquifer is largely due to decreased replenishment and increased consumptive use.

9. **Comment:** One commentor expressed support of the concept of reinjection of treated groundwater due to the nonconsumptive use. (W11-4)

Response: Comment noted and is agreed with by the agencies. The selected alternative will employ reinjection of treated groundwater as a component of remediation.

10. **Comment:** One commentor had a hard time seeing how [the agencies] can have a high degree of confidence that [the agencies] have adequately described the extent or the degree of contamination in the aquifer. He asserted that because the agencies are seeing things that are surprising them, this is an indication that they lack some understanding as to the degree of contamination in the aquifer. The commentor also suggested that the agencies lack an adequate understanding of how the aquifer works under the INEL. (T4-3, T4-4)

Response: The commentor is correct in stating that there are uncertainties regarding the magnitude and extent of contamination in the aquifer. The Snake River Plain Aquifer is a complex hydrogeologic system. However, the objective of the RI process is not to remove all uncertainty, but rather to gather information sufficient to support an informed risk management decision regarding which remedy appears the most appropriate for the site.

Although the groundwater contamination at TAN has not been fully characterized, a great deal of data has been collected about the area. Based on the information gathered as part of this decision making process, the agencies believe they have chosen a remedial action that will be protective of human health and the environment.

11. **Comment:** One commentor asserted that the compounds existing in the aquifer in the vicinity of the TSF Injection Well should be considered as listed wastes. He took issue with DOE and EG&G's statements that inadequate records exist to determine the past use of the halogenated organics found in the contaminated groundwater. The commentor stated that it is widely known among craft workers who used TCE at TAN that the bulk of the TCE was used for cleaning operations. He concluded by asking that a confidential, independent survey of the current and former workers at the site be conducted and the results of the survey be reported directly to DOE. (W13-1 through W13-5)

Response: DOE-ID conducted an evaluation of the solvent usage at TAN that can be found in the Administrative Record. The document is entitled *Evaluation of Chemical Usage at TAN* dated April 1992 and is numbered as AR 3.2 in the Administrative Record. This evaluation concluded that the waste discharged to the aquifer through the injection well was not a listed hazardous waste because the organic chemicals in the waste were not used as solvents and disposal practices were not documented. This initial evaluation was quite exhaustive and further investigation or surveys would not be a productive use of current resources. It is likely that any identified listed waste within the operable unit would be de-listed during the ROD and thus, the selected remedy would not be significantly altered.

12. **Comment:** One commentor stated that the [sludge removal] cleanup operation was not completed in accordance with the Work Package documentation and the cleanup instructions. Specifically, the commentor states that the well was to have been flushed until the effluent was clear, but at the termination of the work, the effluent was still laden with contaminated sediment and sludge. (W13-6 through W13-8)

Response: The comment is correct with regard to the past events that happened during the sludge removal activity. The full scope of the field work was not completed because the site conditions were different than planned and outside of the work scope. The cleanup operation had two objectives. The first was to remove the sludge from within the well. This effort was completed. The second was to continue pumping until the water cleared up, however, this objective was not completed due to a lack of waste effluent storage capacity. Therefore, work was suspended as documented in the May 1992 Remedial Investigation/Feasibility Study Work Plan for OU 1-07B. However, 60 drums of sludge and liquid were removed.

13. **Comment:** One commentor stated that when the well's pump and piping were removed after the sludge removal activity was abandoned, external contamination (on the outside of the pump and piping) was flushed back down the well during steam cleaning operations. The commentor argued that contaminated liquid, which was flushed back down the well, should have been disposed of as mixed waste. He advocated additional action be taken to remove the remaining sludge and contamination from the well. (W13-9 through W13-12)

Response: The comment is correct with regard to past events that occurred during the pump and sludge removal activity. Part of the purpose of the proposed remedial action at the TSF Injection Well (TSF-05) is to remove residual contamination from the injection well. Part of the purpose of the selected alternative is to contain and treat the portion of the aquifer contaminated with TCE concentrations above 5,000 μg/L. These actions include treatment of the contaminated groundwater with a more thorough design than the 1990 removal effort.

14. **Comment:** One commentor favored Alternative 2 (Limited Action Consisting of Institutional Controls). (W2-1) He argued that the movement of water in the aquifer has been so slight that the contamination would not pose a threat to anyone unless they drilled into the area. "Drilling such a well," he stated, "is highly unlikely since the property should be retained for its present purpose for a number of years into the future." (W2-2, W2-3)

Response: For an alternative to be selected at a Superfund site, the alternative must meet two threshold criteria: overall protection of human health and the environment and compliance with ARARs. The primary ARAR at this site is the drinking water standards promulgated pursuant to the Safe Drinking Water Act. Because Alternative 2 would not have met the drinking water standards for hundreds of years in the future, it was not selected.

Risk modeling conducted as part of the RI indicated that if the site was not remediated, contaminant levels in the vicinity of the TSF injection well would still exceed drinking water standards even at this later date. In fact, the results of the RI indicated that without remediation, the well would continue to pollute the Snake River Plain Aquifer for hundreds of years into the future.

15. **Comment:** A commentor asked, "If land-use is considered, is the additional cost of Alternative 3 justified over Alternative 2?" (W10-1)

Response: The comment specifically asked whether the additional cost of Alternative 3 (i.e., the Preferred Alternative in the Proposed Plan) was justified over Alternative 2. Please note that the agencies have reevaluated the remedial alternatives in light of new information that became available in the year since the proposed plan was issued. As a result of this process, the agencies chose Alternative 4 as the selected remedy rather than Alternative 3. A description of the selected remedy is presented in Section 9 of this ROD.

The need for a reasonable timeframe for restoration of TAN groundwater is dictated in the National Contingency Plan which is the implementing regulation for CERCLA. The remedial action for TAN groundwater is conducted in accordance with the Groundwater Protection Strategy presented in the National Contingency Plan. This regulation requires that both current and potential future use of the groundwater be considered in remedy selection, and that groundwater resources be protected and restored if necessary and practicable. Accordingly, the agencies have determined that a reasonable timeframe for restoration of the aquifer to drinking water standards should not exceed 100 years, which is consistent with current land use assumptions for INEL.

The agencies believe that the additional cost of Alternative 4 is justified over both Alternatives 2 and 3. Alternative 2 proposes institutional controls to prevent the use of contaminated groundwater until cleanup standards are achieved. However, under this alternative, the contaminant plume would continue to grow and contaminant concentrations would exceed drinking water standards for hundreds of years. Consequently, exposure to the plume would continue to pose unacceptable risks to human health and the environment for an unreasonably long time period. It cannot be assumed that institutional controls would be maintained for hundreds of years. Therefore, Alternative 2 was not selected.

Alternative 3 involves removal or containment of the greater than 5,000 μg/L portion of the TCE plume and institutional controls for the rest of the plume. Recent modeling has shown that after removal of the greater than 5,000 μg/L portion of the plume, approximately 200 years would be required for dispersion to reduce the remaining plume to concentrations below MCLs. Therefore, Alternative 3 would only meet the 100-year restoration timeframe if further remediation of the less than 5,000 μg/L portion of the plume is included in the Site-wide ROD. Alternative 4 is considered more effective in the long-term than Alternative 3 because it is less dependant on subsequent remedial actions. In addition, Alternative 4 is more effective in reducing the toxicity, mobility, and volume of the contaminant plume through treatment because it addresses a much larger volume of contaminants than Alternative 3, and would prevent migration of a major component of the plume into previously uncontaminated groundwater. With respect to remedial action costs, the operations and maintenance costs to implement Alternative 4 would be greater than Alternative 3, but the restoration timeframe would be accelerated. Therefore, the agencies agree that Alternative 4 better satisfies the CERCLA evaluation criteria than does Alternative 3.

16. **Comment:** A commentor queried, "Considering the flow rate of the aquifer, has the concentration of contaminants at a point where unrestricted access will be possible (likely) in the future been calculated to justify the cost of Alternative 3?" (W10-2)

Response: Please note that in light of new information made available in the year since the proposed plan was issued, the agencies have reevaluated the remedial alternatives.

As a result of reevaluation of the remedial alternatives, the agencies have chosen Alternative 4 as the selected remedy rather than Alternative 3. A description of the selected remedy is given in Section 9 of the ROD.

Contaminant concentration levels were estimated for the time at which unrestricted access to the site is possible. The baseline risk assessment conducted as part of the RI evaluated risks to future residents ingesting water pumped from the TSF Injection Well. It evaluated the risks for the years 2024, 2040, and 2094. The risk assessment assumed the site was not remediated. Results of the risk assessment indicated that even as late as 2094 contaminant levels at the injection well will still be at levels that exceed drinking water standards and thus pose an unacceptable risk to human health and the environment.

The agencies believe that the additional cost of Alternative 4 is justified over both Alternatives 2 and 3. Alternative 2 proposes institutional controls to prevent use of contaminated groundwater until cleanup standards are achieved by plume dispersion and radioactive decay. However, Alternative 2 would require an unacceptable time period, i.e., hundreds of years, during which groundwater contaminant concentrations would exceed drinking water standards. Therefore, exposure to groundwater contamination would pose unacceptable risks to human health and the environment for an unreasonable period of time. It cannot be safely assumed that institutional controls would be maintained for hundreds of years, consequently Alternative 2 was not selected.

Alternative 3 involves removal or containment of the greater than 5,000 μg/L portion of the TCE plume and institutional controls for the remainder of the plume. Recent modeling indicates that upon removal of the greater than 5,000 μg/L portion of the plume; approximately 200 years would be required for dispersion to reduce the remaining plume to concentrations below MCLs. Consequently, Alternative 3 would only meet the 100-year timeframe for aquifer restoration if additional remediation of the less than 5,000 μg/L portion of the plume is included in the Site-wide ROD. Alternative 4 is considered more effective in the long-term than Alternative 3 because it is less dependent on subsequent remedial actions. Furthermore, Alternative 4 is more effective in reducing toxicity, mobility, and volume of the contaminant plume through treatment because it addresses a much larger volume of contaminants than Alternative 3, and would prevent migration of a major component of the plume into previously uncontaminated groundwater. Although the operations and maintenance costs are greater to implement Alternative 4, the restoration time would be accelerated. Therefore, the agencies agree that Alternative 4 better satisfies the CERCLA evaluation criteria than does Alternative 3.

17. **Comment:** One commentor asked about the selected alternative, "How many injection wells would be required and where would they be sited so as to not influence the pump/treat operation and dilute existing groundwater contamination?" (W11-3)

Response: The specific number and location of reinjection and extraction wells will be determined as part of the RD process. The locations of the reinjection and extraction wells will be selected such that the well system will provide hydraulic containment and enhance groundwater extraction and cleanup as applicable. The well system will be designed to provide remediation of the entire TCE contaminant plume where TCE concentrations are greater than 25 μg/L. The remediation strategy will promote aquifer restoration by controlled reinjection of treated groundwater into the aquifer and simultaneous extraction and treatment of contaminated groundwater. Dilution is not the intent of the proposed reinjection. Reinjection will be performed upgradient of TSF-05

to maintain hydraulic control in the zone of greatest contamination. In the dissolved phase plume, downgradient reinjection of treated groundwater will be used to avoid dilution of dissolved phase contamination.

18. **Comment:** One commentor stated that he supported the selected alternative because he couldn't see where there would be worth spending all that additional money to do (Alternative 4) when you don't really accomplish that much more out of it. (T1-2)

Response: Please note that in light of new information made available in the year since the proposed plan was issued, the agencies have re-evaluated the remedial alternatives. As a result of re-evaluation of the remedial alternatives, the agencies have chosen Alternative 4 as the selected remedy rather than Alternative 3.

Alternative 3 involves removal or containment of the greater than 5,000 μg/L portion of the TCE plume and institutional controls for the remainder of the plume. Alternative 3 would only meet the 100-year timeframe for aquifer restoration if additional remediation of the less than 5,000 μg/L portion of the plume is included in the Site-wide ROD. Alternative 4 is considered more effective in the long-term than Alternative 3 because it is less dependent on subsequent remedial actions. Furthermore, Alternative 4 is more effective in reducing toxicity, mobility, and volume of the contaminant plume through treatment because it addresses a much larger volume of contaminants than Alternative 3, and would prevent migration of a major component of the plume into previously uncontaminated groundwater. Although the operations and maintenance costs are greater to implement Alternative 4, the restoration time would be accelerated. Furthermore, the current cost evaluation of Alternative 4 shows that the cost of the selected alternative is considerably less in comparison to the cost given in the Proposed Plan and the costs of Alternative 3 and Alternative 4 are comparable. Therefore, the agencies agree that Alternative 4 better satisfies the CERCLA evaluation criteria than does Alternative 3.

19. **Comment:** A person stated that one of the surprises at the site was finding contaminants that the (DOE) didn't know were there. He stated that although the selected alternative takes care of what (the agencies) currently know about the site, if there are changes in the future, (the agencies) will have to reassess things. (T1-3)

Response: New information may be generated during the Remedial Design (RD)/Remedial Action (RA) process that could affect the remedy selected in the ROD. If new information is received, the agencies would reassess the site in light of the new information to determine whether changes should be made to the selected remedy. Three types of changes could take place: (1) nonsignificant changes (e.g., changes that fall within the normal scope of changes taking place during the RD/RA engineering process); (2) significant changes (e.g., changes to a component of the remedy or a change in timing, cost, or implementability); and (3) fundamental changes (e.g., changes that may cause the agencies to reconsider the hazardous waste management approach selected in the ROD) Nonsignificant changes will be recorded in the Administrative Record. Significant changes to the ROD will be documented in an Explanation of Significant Differences. Fundamental changes require an amendment to the ROD.

In addition, the agencies will evaluate the success of the selected remedy within 5 years, and at least every 5 years thereafter until contaminant concentrations drop below MCLs or risk-based levels. Any new information generated by the remedial action will be evaluated during these periodic reviews.

If the additional decisions are determined to be either (1) a significant difference to a component of a remedy or (2) a significant change that fundamentally alters the remedy requiring amendment of the ROD, the appropriate public information will be provided. In the first case, and Explanation of Significant Difference (ESD) will be prepared. The agencies would also conduct the following public involvement activities:

- Publish a notice of availability and brief description of the ESD in a local newspaper of general circulation, as required by the CERCLA, Section 117(c).
- Make the ESD available to the public by placing it in the administrative record file and information repository.
- Place the information supporting the change in the administrative record file, as well as the lead agency's response to any comments. A Responsiveness Summary is not required.

In the second case, the agencies would repeat the ROD process in accordance with the Comprehensive, Environmental Response, Compensation, and Liability Act, Section 117 by issuing a revised proposed plan and an amended ROD.

20. **Comment:** The Environmental Defense Institute supported Alternative 4 (25 μg/L Groundwater Plum Extraction with Air Stripping; Enhanced Extraction of Hotspot with Aboveground Treatment) with a few caveats. The commentor asserted that discharge of the "treated" groundwater would contain strontium-90 at levels greater than 300 picocuries per liter (pCi/L). This, he maintained, violates the Clean Water Act and the Idaho Hazardous Waste Management Act and, therefore, does not meet ARARs. The commentor concluded that discharging Sr-90 at levels 300 times greater than the EPA's MCL of 8 pCi/L so that it can migrate back into the aquifer is unconscionable. (W12-1, W12-2, T3-2)

Response: The agencies agree with the commentor regarding the preferred alternative. The agencies have re-evaluated the remedial alternatives in the year since the Proposed Plan was issued. As a result of this process, the agencies have chosen Alternative 4 as the selected remedy rather than Alternative 3. A complete description of the selected remedy is given in Section 9 of the ROD.

The commentor is specifically concerned about discharge of treated effluent containing radionuclides at concentrations above MCLs to the TSF-07 disposal pond. Please note that the selected remedy no longer proposes discharge of treated effluent to the TSF-07 percolation pond. Instead, the treated effluent will be reinjected to the aquifer through wells designed for that purpose. The extent of radionuclide contamination in the aquifer is limited to the hotspot in the general vicinity of the TSF-05 injection well. Therefore, it is expected that only the portion of the remedy which focuses on the hotspot will need to address radionuclides.

Radionuclides will be treated at the hotspot to the extent practicable. The resins used in the OU 1-7A Interim Action were not effective in removing cesium-137 from TAN groundwater. Therefore, laboratory tests are currently being conducted to determine the best commercially-available resins to remove cesium-137, strontium-90, and other radionuclides from TAN groundwater. Additionally, studies are being conducted to determine the most effective techniques (e.g., filtering, use of clarifiers) to remove

radiologically-contaminated particulate from the extracted groundwater. The agencies will review the results of these studies in the fall of 1995 to develop treatment options for radionuclides in the extracted groundwater. The agencies will then evaluate the various treatment options within the context of the CERCLA threshold and balancing criteria to assess their anticipated relative performance for this final remedy. The CERCLA evaluation criteria are discussed in Section 8 of this ROD. If none of the active treatment options effectively satisfy the evaluation criteria, a possible option could include no active radionuclide removal from the extracted groundwater. Under this "worst case" option, the extracted groundwater would be treated to remove VOCs only, and then reinjected into the upgradient portion of the hotspot. In this way, the radiologically contaminated groundwater would be hydraulically contained with extraction downgradient and reinjection upgradient. The extent of radionuclide contamination would decrease over time due to radioactive decay.

The extent to which radionuclides will be treated at the hotspot cannot be determined until the results of the laboratory studies are available. The agencies will reach a decision regarding radionuclide treatment by the fall of 1995 after they fully evaluate the laboratory tests. However, since there is currently no practical treatment technology for tritium, it is expected that the effluent reinjected into the hotspot will contain tritium.

Provisional startup of the Groundwater Test Facility will occur prior to the agencies decision regarding radionuclide treatment, concurrent with the resin tests. Water would be pumped from TAN-25 or one of the other wells located farther from TSF-05. These wells are not expected to have as high of a percentage of contaminated sludges or concentration of dissolved contaminants as TSF-05. By pumping from these wells during provisional startup, the elements of the treatment train can be optimized, and data regarding removal efficiencies for COCs will be obtained, while still providing some mass removal for the VOCs. These data will be useful in making the decision on radionuclide removal standards. Treated effluent will be reinjected to upgradient portions of the hotspot.

The selected remedy meets ARARs by restoring as much of the aquifer as practicable in accordance with the Groundwater Protection Strategy presented in the National Contingency Plan. This regulation requires that both current and potential future use of the groundwater be considered in remedy selection, and that groundwater resources be protected and restored if necessary and practicable. Accordingly, the agencies have determined that a reasonable time frame for restoration of the aquifer to drinking water standards should not exceed 100 years, which is consistent with current land use assumptions for the INEL.

21. **Comment:** The Environmental Defense Institute (EDI) supports Alternative 4: 25 μg/L Groundwater Plume Extraction with Air Stripping; Enhanced Extraction of Hotspot with Aboveground Treatment but suggests use of a lined evaporation pond to receive the treated discharge from the filtration system at TAN. (W12-3)

Response: The agencies agree with the commentor regarding the preferred alternative. The agencies have re-evaluated the remedial alternatives in the year since the Proposed Plan was issued. As a result of this process, the agencies have chosen Alternative 4 as the selected remedy rather than Alternative 3. A complete description of the selected remedy is given in Section 9 of the ROD.

The commentor specifically suggests discharge of treated effluent to a lined evaporation pond instead of a percolation pond. The agencies propose that the treated effluent will be reinjected to the aquifer through wells designed for that purpose and therefore unlined percolation ponds will not be used to receive effluent.

The extent of radionuclide contamination in the aquifer is limited to the hotspot in the general vicinity of the TSF-05 injection well. So it is expected that only the portion of the remedy which focuses on the hotspot will need to address radionuclides.

Radionuclides will be treated at the hotspot to the extent practicable. The resins used in the OU 1-7A Interim Action were not effective in removing cesium-137 from TAN groundwater. Therefore, laboratory tests are currently being conducted to determine the best commercially-available resins to remove cesium-137, strontium-90, and other radionuclides from TAN groundwater. Additionally, studies are being conducted to determine the most effective techniques (e.g., filtering, use of clarifiers) to remove radiologically-contaminated particulate from the extracted groundwater. The agencies will review the results of these studies in the fall of 1995, to develop treatment options for radionuclides in the extracted groundwater. The agencies will then evaluate the various treatment options within the context of the CERCLA threshold and balancing criteria to assess their anticipated relative performance for this final remedy. The CERCLA evaluation criteria are discussed in Section 8 of this ROD. If none of the active treatment options effectively satisfy the evaluation criteria, a possible option could include no active radionuclide removal from the extracted groundwater. Under this "worst case" option, the extracted groundwater would be treated to remove VOCs only, and then reinjected into the upgradient portion of the hotspot. In this way, the radiologically contaminated groundwater would be hydraulically contained with extraction downgradient and reinjection upgradient. The extent of radionuclide contamination would decrease over time due to radioactive decay.

The extent to which radionuclides will be treated at the hotspot cannot be determined until the results of the laboratory studies are available. The agencies will reach a decision regarding radionuclide treatment by the fall of 1995, after they fully evaluate the laboratory tests. However, since there is currently no practical treatment technology for tritium, it is expected that the effluent reinjected into the hotspot will contain tritium.

22. **Comment:** A number of commentors supported proposed Alternative 3 (5,000 μg/L) Groundwater Plume Extraction; Enhanced Extraction of Hotspot with Aboveground Treatment. (W1-1, W3-1, W11-1, T1-1, T1-4, T2-1)

Response: Please note that in light of new information made available in the year since the proposed plan was issued, the agencies have reevaluated the remedial alternatives. As a result of reevaluation of the remedial alternatives, the agencies have chosen Alternative 4 as the selected remedy rather than Alternative 3.

DOE, EPA, and IDHW agree that Alternative 4 is the alternative that best meets the RAO and the nine evaluation criteria identified under the CERCLA. A long-term groundwater monitoring program will ensure that this selected remedy will be protective of human health and the environment.

Alternative 3 would only meet the 100-year timeframe for aquifer restoration if additional remediation of the less than 5,000 μg/L portion of the plume is included in the Site-wide

ROD. Alternative 4 is considered more effective in the long-term than Alternative 3 because it is less dependent on future remedial actions. Furthermore, Alternative 4 is more effective in reducing toxicity, mobility, and volume of the contaminant plume through treatment because it addresses a much larger volume of contaminants than Alternative 3, and would prevent migration of a major component of the plume into previously uncontaminated groundwater. Also the current cost evaluation of Alternative 4 shows that the cost of the selected alternative is considerably less in comparison to the cost given in the Proposed Plan and the costs of Alternative 3 and Alternative 4 are comparable.

23. **Comment:** While a number of commentors expressed their preferences for other proposed alternatives, one commentor expressed strong disagreement with the selected alternative. The commentor argued that the cost to taxpayers does not justify remediating a negligible public health risk. (W8-1)

Response: Please note that in light of new information made available in the year since the proposed plan was issued, the agencies have reevaluated the remedial alternatives. As a result of reevaluation of the remedial alternatives, the agencies have chosen Alternative 4 as the selected remedy rather than Alternative 3. A description of the selected remedy is given in Section 9 of the ROD.

The agencies share the commentor's concerns regarding the amount of money spent on remedial actions. The cost estimate of approximately $29,888,000 million for the preferred alternative includes capital costs associated with construction, operations and maintenance costs, and post-closure costs for long-term monitoring. The current evaluation of Alternative 4 shows that the cost is considerably less in comparison to the cost given in the Proposed Plan and the costs of Alternative 3 and Alternative 4 are comparable.

Despite the high cost of remediating this site, the CERCLA requires that actual or threatened releases of hazardous substances that may present an imminent and substantial endangerment to human health and welfare or the environment be addressed by implementing a remedial action. The National Contingency Plan which is the implementing regulation for CERCLA requires that TAN groundwater restoration occurs within a reasonable timeframe. Furthermore, the National Contingency Plan delineates the Groundwater Protection Strategy, which will be followed during the course of remedial action for TAN groundwater. The Groundwater Protection Strategy requires that both current and potential future use of the groundwater be considered in remedy selection, and that groundwater resources be protected and restored if necessary and practicable. Therefore, the agencies have determined that a reasonable timeframe for aquifer restoration to drinking water standards should not exceed 100 years. The 100-year timeframe is consistent with current INEL land use assumptions.

Alternative 4 is considered more effective than Alternative 3 in the long-term because it is less dependent on future remedial actions. Furthermore, Alternative 4 is more effective in reducing toxicity, mobility, and volume of the contaminant plume through treatment because it addresses a the largest volume of contaminants, and would prevent migration of a major component of the plume into previously uncontaminated groundwater. Although the operations and maintenance costs are greater to implement Alternative 4 as opposed to Alternative 3, the restoration time would be accelerated.

Therefore, the agencies agree that Alternative 4 best satisfies the CERCLA evaluation criteria.

Remedial Design/Remedial Action Concerns

24. **Comment:** One commentor stated that, "In 1953, the TSF Injection Well was drilled at TAN. It was used from 1955 through 1972. The well was drilled to a depth of 310 ft. Perforations to allow deposit of injected materials into the aquifer were placed from 180 to 244 ft and from 269 to 305 ft. Presently the aquifer is found between its top at 200 ft and the interbed at 400 ft." (W9-1)

Response: The commentor is correct about the depths of perforations in the well shaft. Because there are perforations above the current water table, it is possible that contaminants are present around the injection well in the subsurface bedrock materials above the aquifer.

25. **Comment:** One commentor suggested that contaminants had been injected into the vadose zone in a "dry area" approximately 20 ft above the aquifer. (W9-4) Because the water level of the aquifer has dropped enhanced extraction technologies used as part of the selected alternative will not be effective at decontaminating dry areas above the aquifer. He concluded that contaminants will remain after completion of the planned remediation. (W9-2) The commentor wanted to know, "What can or will be done to abate contamination in this dry, contaminated area above the 200-ft mark which the proposed techniques do not address?" (W9-6)

Response: Please note that in light of new information made available in the year since the proposed plan was issued, the agencies have reevaluated the remedial alternatives. As a result of reevaluation of the remedial alternatives, the agencies have chosen Alternative 4 as the selected remedy rather than Alternative 3. A description of the selected remedy is given in Section 9 of the ROD.

The selected alternative focuses on remediation of groundwater contaminants and the secondary source in the TSF injection well and not on contamination that may be present above the aquifer. If, during the course of the RD/RA, new information becomes available that indicate contaminants are present above the aquifer that pose an unacceptable risk to human health and the environment, the agencies will reevaluate the remedial action in light of this new information.

Because contaminants will remain at the site above levels that would permit unlimited use and unrestricted exposure, the NCP requires the agencies to review the remedial action every 5 years. Thus, if the situation envisioned by the commentor arises, the agencies are required by law to reevaluate the remedial action to ensure it remains protective of human health and the environment.

All waste area groups at the INEL will perform comprehensive RI/FSs after each operable unit at the WAG has been evaluated. During the comprehensive RI/FS for WAG 1, the agencies will reevaluate available data to ensure all contaminants at TAN are or will be remediated to levels that are protective of human health and the environment.

26. **Comment:** A commentor asked, "If the waterline were to rise above the top perforation, will a second "hotspot" and attendant contamination plume form? Will this require a second abatement procedure?" (W9-5)

Response: The scenario of a rising waterline was not evaluated during the RI/FS phase of this action. It is true that the well is perforated above the water table and as a result, it is possible that contaminants are present around the injection well above the water table. If the waterline were to rise into this area and if contaminant concentrations were at high enough levels, it is possible that a "hotspot" and attendant plume could form.

The TSF Injection Well site will be subject to future reviews mandated by the FFA/CO and the CERCLA. If the scenario envisioned by the commentor occurs, it could be evaluated as new information in one of these reviews. The RD/RA Work Plan requires DOE to routinely evaluate data compiled from the WAG to determine any potential WAG-specific problems that may become evident. In addition, the entire WAG 1 (which includes OU 1-07B) must undergo a comprehensive WAG-wide RI/FS which is scheduled to begin July-August 1995. The CERCLA requires that any new information received during the RD/RA phase of the cleanup be evaluated to ascertain its impact on the selected remedial alternative. Because contaminants will remain at the site above levels that allow for unlimited use and unrestricted exposure, the NCP requires the agencies to review the remedial action every 5 years. Thus, if the scenario envisioned by the commentor occurs, the agencies may determine that a second abatement procedure would be necessary.

27. **Comment:** One commentor recommended that if the treatment technology is not able to extract enough strontium to get (strontium-90 levels) down to drinking water standards, then at least (the liquid effluent) should go into a lined evaporation pond. (T3-3) Another commentor shared this concern about using a lined evaporation pond. (T4-2)

Response: Instead of using a percolation pond to receive effluent, the agencies propose that the treated effluent will be reinjected to the aquifer through wells designed for that purpose. Since the extent of radionuclide contamination in the aquifer is limited to the hotspot in the general vicinity of the TSF-05 injection well; it is expected that only the portion of the remedy which focuses on the hotspot will need to address radionuclides.

Radionuclides will be treated at the hotspot to the extent practicable. The resins used in the OU 1-7A Interim Action were not effective in removing cesium-137 from TAN groundwater. Therefore, laboratory tests are currently being conducted to determine the best commercially-available resins to remove cesium-137, strontium-90, and other radionuclides from TAN groundwater. Additionally, studies are being conducted to determine the most effective techniques (e.g., filtering, use of clarifiers) to remove radiologically-contaminated particulate from the extracted groundwater. The agencies will review the results of these studies in the fall of 1995 to develop treatment options for radionuclides in the extracted groundwater. The agencies will then evaluate the various treatment options within the context of the CERCLA threshold and balancing criteria to assess their anticipated relative performance for this final remedy. The CERCLA evaluation criteria are discussed in Section 8 of this ROD. If none of the active treatment options effectively satisfy the evaluation criteria, a possible option could include no active radionuclide removal from the extracted groundwater. Under this "worst case" option, the extracted groundwater would be treated to remove VOCs only, and then reinjected into the upgradient portion of the hotspot. In this way, the radiologically contaminated

groundwater would be hydraulically contained with extraction downgradient and reinjection upgradient. The extent of radionuclide contamination would decrease over time due to radioactive decay.

28. **Comment:** One commentor was concerned about the aerial dispersement problems associated with using evaporation ponds. (T4-2)

Response: The selected alternative proposes to reinject treated groundwater directly into the subsurface and will not use evaporation ponds. Therefore aerial dispersement problems will not be an issue.

29. **Comment:** One commentor urged the use of steam over other surfactants because it would be a cleaner operation. (T1-5)

Response: Because of the heterogeneity of the material disposed in the TSF-05 injection well, the potential for contaminant mobilization, and the potential noncontactability of the secondary source present within the hotspot, the proposal to use surfactant or steam has been removed.

COMMENTS PERTAINING TO NO ACTION TRACK 1 SITES

General Technical Comments

30. **Comment:** Citing Table 3 (see page 14 of the Proposed Plan), a commentor asked, "How can risk-based soil concentrations calculated from 10^{-6} excess cancers be calculated for noncarcinogens?" (W6-1) "How can you have greater than 1,000,000 ppm in soil?" He reminded the agencies of the risks other than cancer: acute toxicity of solvents; explosion and fire hazards; and hazards from instability of soils composed totally of solvents? (W6-2)

Response: A hazard quotient (HQ) was determined for the noncarcinogen risk-based concentrations and not a 10^{-6} risk value. Table 3 differentiated carcinogenic and noncarcinogenic contaminants by shading the carcinogenic contaminants. The range of contaminant concentrations shown in Table 3 resulted from the various sizes of the sites evaluated. As a site gets smaller, greater concentrations of a contaminant are required to pose a 10^{-6} risk. Some sites that were evaluated were so small that essentially pure contaminant (i.e., 1,000,000 ppm) was needed to pose a risk.

The other risks mentioned are valid but were not considered the main scenarios for risk at the sites to the potential occupational and future resident receptors. The process agreed to by the agencies in evaluating these low probability hazard sites was to use a conservative risk model that evaluated the effects of potential contaminants to humans along the most sensitive and likely pathways shown in Table 3.

31. **Comment:** One commentor asked, "How can 46% benzene not be an inhalation hazard?" (W6-3)

Response: Table 3 of the Proposed Plan does show that 46% (or 465,000 ppm) of benzene to be an air inhalation hazard. The purpose of this table was to show the required contaminant concentrations for the various pathways to pose a 10^{-6} on HQ >1 risk (i.e., risk-based soil concentrations). The actual benzene concentration detected

at the site (0.55 ppm) is presented in the discussion for TSF-14. Since the actual benzene at the site is several orders of magnitude below the risk-based soil concentrations shown in Table 3, the site was recommended for No Action.

32. **Comment:** One commentor was glad to see resolution of the "No Action" sites. (W1-5)

Response: Comment noted.

33. **Comment:** Two commentors disagreed about whether an indoor pathway should be evaluated in determining the risk posed to future residential users by surface contaminants at the No Action Track 1 Sites. One commentor felt that an indoor pathway should be addressed because contaminants present in the soil would be in higher concentrations in a basement because of the basement's lower barometric pressure. (T2-3) The other commentor stated that if contamination was present, it would not be deep enough to create an exposure pathway to the residents. (T1-7)

Response: The risk assessment used for the 31 No Action Track 1 sites evaluated the risk posed by volatile inhalation in a conservative manner. The risk assessment calculated the concentration of a specific volatile compound that would need to be present in the site soils to pose a risk via the air volatilization pathway. This approach conservatively assumes that the receptor would be exposed to site soil contaminated with volatiles to a depth of 10 ft, and is not restricted to a location.

34. **Comment:** One commentor argued that the most dominant pathway for exposure to surface contaminants is an outdoor pathway because the wind would stir up the surface areas. (T1-8) Another commentor discounted the other's statement stating that the wind decreases the surface concentrations of surface contaminants. High wind and fresh air will move the contaminants away. (T2-2)

Response: The effect of airborne contaminants was identified as a major pathway to the Track 1 risk evaluation process and was considered during the 31-site assessment by evaluating the air inhalation pathway for dust and air volatilization pathway for vapors.

The risk assessment used for the 31 No Action Track 1 sites evaluated the risk posed by volatile inhalation in a conservative manner. The risk assessment calculated the concentration of a specific volatile compound that would need to be present in the site soils to pose a risk via the air volatilization pathway. This approach conservatively assumes that the receptor would be exposed to the site soil contaminated with volatiles to a depth of 10 ft and is not restricted to a location.

Comments Received on Loss-of-Fluid-Test (LOFT)-05 Fuel Tanks

35. **Comment:** One commentor asked about the LOFT-05 tanks and associated piping and whether there were plans to upgrade the system to current underground storage tank (UST) standards? "If so," he asked, "why not remove the old system and replace it with a new, double-contained system with leak detection that can be relied upon?" (W7-1)

Response: The residual product in the LOFT-05 Fuel Tanks was removed in 1991 because they were no longer in use. However, the tanks were left in the ground in an "active" status to maintain the building's capabilities because the future use for the LOFT facility was uncertain. If, or when, the tanks are needed for use again, they will have to

meet the current UST regulations. The final use of the tanks versus replacement or complete removal will depend on the specific need of the future use.

Comments Received on TSF-39 [Transite (Asbestos) Contamination]

36. **Comment:** A commentor stated about the TSF-39 asbestos contamination site, "[it seems as if it] would be relatively easy to clean up and dispose of the asbestos cement with other asbestos at the Central Facilities Area (CFA) landfill." (W7-2)

Response: The TSF-39 Transite Site consists of small pieces of asbestos cement (Transite) scattered over an approximately 400 × 2,500-ft area. The material is continually being brought to the surface as a result of wind and water erosion. As a result, multiple cleanup efforts would be required. Asbestos bound in cement does not present an unacceptable risk and the expense of multiple cleanup efforts is not justified.

Comments Received on Water Reactor Research Test Facility (WRRTF)-02, -03 and -06 (Waste Water Disposal Sites)

37. **Comment:** One commentor thought that the wastewater treatment or wastewater disposal sites should be sampled and fully analyzed because the records are incomplete. (T4-6) Another commentor agreed that failing to sample the no action sites didn't sound to him to be a very reasonable way to approach that kink of assessment. (T3-4) A third asked "Why not take some samples and be sure?" (W7-3)

Response: The DOE received additional sampling information from the WRRTF-05 injection well that further increased the confidence that the WRRTF disposal pond sites do not pose an unacceptable risk to either human health or the environment. The WRRTF-05 injection well was operational from 1959 to 1983, when it was abandoned and replaced by the various WRRTF disposal ponds. The results from two rounds of groundwater monitoring samples collected in May and July of 1994, from the former WRRTF-05 injection well detected only Co-60 at concentrations greater than acceptable risk levels. The presence of Co-60 in the WRRTF-05 injection well is from a known one-time release in the mid-1960s, and not the result of routine disposal activities at the WRRTF. Site investigations and radiological field surveys have not detected the presence of Co-60, or any other radionuclide, at the WRRTF disposal ponds.

COMMENTS DEEMED BEYOND THE SCOPE OF THE TSF INJECTION WELL AND SURROUNDING GROUNDWATER CONTAMINATION AND NO ACTION SITES ROD

Comments and questions on a variety of subjects not specific to TSF Injection Well and Surrounding Groundwater Contamination and No Action Sites were received during the public comment period. Those comments addressed a general distrust of government agencies, statements questioning past management practices, concerns that the nuclear industry will not do the "right" thing, and disagreement amongst public meeting commentors. These out-of-scope comments are not responded to in this Responsiveness Summary. Information on these out-of-scope comments can be obtained from the INEL Public Affairs Office in Idaho Falls or at the local INEL offices in Pocatello, Twin Falls, and Boise.

APPENDIX B

Public Comment/Response List

Appendix B

Public Comment/Response List

Description of Comment/Response List Index

The Public Comment/Response List Index was created to enable commentors and other interested persons to locate the agencies' responses to individual public comments. All oral comments, as given at the public meetings, and all written comments, as submitted, were typed into the attached index. Each comment was then subdivided and assigned a comment code. The codes indicate whether the comment was either written (W code) or taken from the public meeting transcript (T code). The agencies tried to divide comments according to specific concerns, issues or points made by the commentor.

Thirteen people submitted written comments (comments W1-W13) and four others gave oral comments at the public meetings (comments T1-T4). Copies of oral and written comments annotated with their respective comment codes are located in the Administrative Record.

To locate a response to a specific individual's comments, look up the name of the commentor, identify the specific comment you are looking for, then turn to the comment number or page indicated in the Responsiveness Summary.

If, after reviewing the annotated comments in the administrative record, a reader wishes to locate a response to a specific comment, he/she can use the comment code to locate a response as well. The reader should identify the comment code in the index, look up the comment and page number of the response then turn to that page of the Responsiveness Summary.

Comments involving multiple issues were further subdivided and answers may appear in more than one place in the Responsiveness Summary. This was done for only three of the 77 comments.

APPENDIX B

Public Comment/Response List Index

Code	Commentor	Comment	Comment/ Response	Page No.
WRITTEN COMMENTS RECEIVED ON TAN GROUNDWATER SITES				
W1-1	Joseph W. Henscheid	Alternative #3 sounds reasonable.	22	A-17
W1-2	Joseph W. Henscheid	However, this plan ought to recognize a couple of other possible outcomes: (1) What if (for whatever reason) the RAOs change during Phase 1 (10 volume removals)?	4	A-8
W1-3	Joseph W. Henscheid	(2) After Phase 1, what if you find that progress towards achieving the RAOs is minimal?	4	A-8
W1-4	Joseph W. Henscheid	Seems like you might want to review the entire approach rather than continuing pumping.	5	A-8
W2-1	Warren Barry	I would favor Alternative #2. Limited Action *Consisting of Control.*	14	A-11
W2-2	Warren Barry	The movement of the water in 40 years has been so slight that it would pose no threat to anyone unless they proceeded to drill a well into the area.	14	A-11
W2-3	Warren Barry	This seems highly unlikely since the property should be retained for its present purpose for a number of years in the future.	14	A-11
W3-1	Thomas J. Setter, M.D.	I support Alternative #3 as the final alternative for OU 1-07B.	22	A-17
W4-1	Randall C. Morris	There is no evidence that the ecological risks from the remediation activities themselves were considered in the evaluation of alternatives. In many cases, remediation activities designed to reduce human health risks impose unacceptable ecological risks. In this case, facility construction and the disturbance to animal populations from operation of the facilities impose risks on local populations. These should be considered.	3	A-7
W5-1	Beverly Ferrell	I believe the groundwater contamination should be cleaned up as quickly as possible.	6	A-9
W5-2	Beverly Ferrell	We should put no more nuclear waste in the site.	OS	
W5-3	Beverly Ferrell	I am a victim of radiation releases near Hanford. I lived directly across and on the river from Richland (1947-1965).	OS	
W5-4	Beverly Ferrell	I do not trust any government agency (or private) when nuclear waste is concerned.	OS	
W5-5	Beverly Ferrell	I do not believe members of the nuclear industry will do the "right" thing.	OS	
W5-6	Beverly Ferrell	Please do not send me any more propaganda.	OS	
W5-7	Beverly Ferrell	I have lost all respect for our government.	OS	

APPENDIX B

Public Comment/Response List Index

Code	Commentor	Comment	Comment/ Response	Page No.
WRITTEN COMMENTS RECEIVED ON TAN GROUNDWATER SITES				
W8-1	Guy Loomis	I cannot accept the preferred alternative (#3) - Air Stripping and Enhanced Extraction of Hotspot with Aboveground Treatment for the TAN Groundwater Contamination. The dollars per cancer death averted are unacceptable for any of the proposed scenarios. The U.S. Government cannot afford to clean up sites with these kinds of risks. If one could show numbers like $1M per cancer death, then the action would be justified.	23	A-18
W8-2	Guy Loomis	Suggestion: Render the scenario for residential use invalid by filling in the well with bentonite, cap the well head with concrete, and cover a 1-acre area around the site with 2 to 4 in.-size basalt cobble 10 ft deep. [Estimated cost $1M.]	7	A-9
W9-1	Rich Ravhill	In 1953, the TSF Injection Well was drilled at TAN. It was used from 1955 through 1972. The well was drilled to a depth of 310 ft. Perforations to allow deposit of injected materials into the aquifer were placed from 180 to 244 ft and from 269 to 305 ft. Presently the aquifer is found between its top at 200 ft and the interbed at 400 ft.	24	A-19
W9-2	Rich Ravhill	The below surface abatement techniques of steam and surfactant injection (enhanced extraction technologies of Alternative 3) only work where water is present (i.e., within the aquifer). These techniques do not decontaminate dry areas above the aquifer. Since these will not be abated by techniques to be implemented by proposed Alternative 3, these contaminants will remain upon completion of the planned remediation.	25	A-19
W9-3	Rich Ravhill	Due to decreased replenishment (drought) and increased use (irrigation, etc.), the water table has dropped.	8	A-9
W9-4	Rich Ravhill	Assuming previous water levels were higher than the highest perforation (180 ft) and based upon reports that contaminants were found throughout the 200 to 400-ft aquifer area, it is safe to assume contaminants are to be found within the "hotspot" in the dry area above the top of the aquifer at its present 200-ft level.	25	A-19

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WRITTEN COMMENTS RECEIVED ON TAN GROUNDWATER SITES				
W9-5	Rich Ravhill	If the "hotspot" above the waterline will not be decontaminated through the proposed remediation and, due to increased future runoff and replenishment, the water level rises above the top perforation (180 ft or higher), will a second "hotspot" and attendant contamination plume form? Will this require a second abatement procedure?	26	A-20
W9-6	Rich Ravhill	What can/will be done to abate contamination in this dry, contaminated area above the 200-ft mark which the proposed techniques do not address?	25	A-19
W10-1	Mary Magleby	If land use is considered, is the additional cost of Alternative 3 justified over Alternative 2?	15	A-12
W10-2	Mary Magleby	Considering the flow rate of the aquifer, has the concentration of contaminants at a point where unrestricted access will be possible (likely) in the future been calculated to justify the cost of Alternative 3?	16	A-12
W11-1	Lee Tuott	I support the preferred alternative.	22	A-17
W11-2	Lee Tuott	Please provide additional information on the proposed injection of the treated groundwater to the aquifer.	2	A-6
W11-3	Lee Tuott	How many injection wells would be required? Where would they be sited so as to not influence the pump/treat operations and dilute the existing groundwater contamination?	17	A-13
W11-4	Lee Tuott	I support the concept of reinjection of treated groundwater due to the nonconsumptive use.	9	A-10
W12-1	Chuck Broscious	The Environmental Defense Institute supports Alternative 4 as outlined in the RI/FS with the following caveats.	20	A-15
W12-2	Chuck Broscious	Discharge of the "treated" groundwater that contains Sr-90 greater than 300 pCi/L to an unlined percolation pond violates the Clean Water Act, Idaho Hazardous Waste Management Act and, therefore, does not meet the Applicable or ARARs. It is hard to believe that a waste management technique that has caused so much contamination of the soil and groundwater at INEL is still used today. Discharging Sr-90 three hundred times the EPA MCL of 8 pCi/L so that it can again migrate back into the aquifer is unconscionable.	20	A-15

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WRITTEN COMMENTS RECEIVED ON TAN GROUNDWATER SITES				
W12-3	Chuck Broscious	As stated in previous comments, EDI advocates the use of a lined evaporation pond to receive the "treated" discharge from the filtration system at TAN.	21	A-16
W13-1	Anonymous	The Remedial Investigation/Feasibility Study Work Plan for Operable Unit 1-07B, dated May 1992, indicates that approximately 35,000 gallons of TCE has been injected into the aquifer. The RI/FS and the Proposed Plan both state that the original uses of the TCE and PCE cannot be identified due to lack of disposal records and usage records. The compounds existing in the aquifer are not considered listed wastes for these reasons. By the very nature of the chemicals used, the typical uses of these chemicals for cleaning operations and the fact that cleaning operations were conducted at the Test Area North, DOE should have concluded that TCE in the aquifer is a listed waste. During the RI process, EG&G personnel were informed that substantial quantities of TCE were used for solvent cleaning operations and subsequently disposed of through the facility drain system. This information was known by the EG&G WAG 1 Manager in 1991 and suppressed due to the difficulty of dealing with the TCE in the aquifer as a listed waste.	11	A-10
W13-2	Anonymous	It is widely known among the craft workers who used TCE at the Test Area North that the bulk of the TCE was used for cleaning operations (i.e., solvent usage). It is inconceivable that the DOE and EG&G Idaho personnel can assume that such massive quantities of halogenated organics would have been utilized for other purposes. Simply stating that inadequate records exist to determine usage is highly suspect.	11	A-10
W13-3	Anonymous	It was not necessary and not usual to maintain records for chemical usage before the passage of recent environmental laws.	11	A-10
W13-4	Anonymous	The Department of Energy should revisit the issue of TCE usage at the Test Area North.	11	A-10
W13-5	Anonymous	A confidential, independent survey of the current and former craft workers and supervisors should be conducted and the results directly reported to DOE to eliminate the screening of information performed by EG&G Idaho.	11	A-10

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WRITTEN COMMENTS RECEIVED ON TAN GROUNDWATER SITES				
W13-6	Anonymous	The Remedial Investigation/Feasibility Study Work Plan for Operable Unit 1-07B, dated May 1992, indicates that 55 ft of sediment and sludge was removed from the Injection Well. It is true that some of the contamination was removed from the well. However, due to lack of funding, the task was terminated before the remainder of the sludge was removed.	12	A-10
W13-7	Anonymous	The cleanup operation was not completed in accordance with the Work Package documentation and the cleanup instructions. Specifically, the well was to be flushed until the effluent was clear.	12	A-10
W13-8	Anonymous	At the termination of the work, the effluent was still laden with contaminated sediment and sludge.	12	A-10
W13-9	Anonymous	The equipment used to perform the cleanup operation was abandoned in place at the instruction of the EG&G Project Manager. The equipment was removed months later after the EG&G Project Manager had retired.	13	A-11
W13-10	Anonymous	When the pump and piping abandoned in the well was later removed, external contamination (on the outside of the pump and piping) was flushed back down the well during steam cleaning operations, at the direction of the EG&G Project Manager. The contaminated liquid, which should have been disposed of as mixed waste, was flushed back into the aquifer.	13	A-11
W13-11	Anonymous	DOE should consider additional action to remove the remaining sludge from the well and determine what action to consider for removal of the contaminants flushed back down the well.	13	A-11
W13-12	Anonymous	The proposed pump and treat system design does not consider that substantial residual contamination exists in well casing and at the bottom of the well.	13	A-11

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ORAL COMMENTS RECEIVED ON TAN GROUNDWATER SITES				
T1-1	C. E. White	What you accomplish with remedial Alternative No. 3 would be the preferred one. It certainly appears from anything that you can come up with from the study, it would alleviate any major problems.	22	A-17
T1-2	C. E. White	I can't see where there would be worth spending all that additional money to do [Alternative] 4 when you don't really accomplish that much more out of it. Your relationship between what's accomplished against what is spent. The closer you get to [Alternative] 4 from [Alternative] 3, the more the ratio changes and you get less for your money. Not that money should be the total alternative or total basis of the alternative, but with what you get out of [Alternative] 3, certainly seems to solve the problem, unless, in the future it's discovered that [Alternative] 3 is not doing what we thought it was going to do. Let's put it that way.	18	A-14
T1-3	C. E. White	One of your surprises was finding some things which you didn't know were there. Well, who knows, maybe in the future, although you'll take care of those now, who knows in the future if something else comes up in their little head, and you have to reassess something.	19	A-14
T1-4	C. E. White	But, to me, the Remedial No. 3 would be the way to go, and it would be, I think, enough protection to satisfy most anybody that I've ever talked to about it.	22	A-17

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ORAL COMMENTS RECEIVED ON TAN GROUNDWATER SITES				
T1-5	C. E. White	I would like to add one more item to what I just said. We were discussing the injection of other substances to try to, let's say, loosen up some of the things that are in that plume, the two were the steam and the other so-called soapy alternative. Certainly the steam, if it works the way it works in the oil the fields, would be a much cleaner type operation to go into rather than injecting some other item into the ground and then have to pull that out, soap or whatever that they drove into this thing, so I'm assuming that in looking at these that the steam would be looked at first, am I right?	29	A-21
T2-1	Steve Novak	I guess I agree with Mr. White that the Alternative No. 3 is probably the best for your cost ratio, and groundwater is very difficult to clean up. It's a difficult problem and cleaning up the contaminated sediments and residuals, I think, is your best alternative as opposed to going after the entire plume.	22	A-17
T3-1	Chuck Broscious	It's real encouraging to see improvements in the public literature that's coming out, to see, you know, data that is—not only states the maximum observed concentrations, but besides that, the drinking water standard. And, you know, that is a significant change from the way things were done in the past. And it's very helpful to have the information presented in that way. I think it's a lot more candid and I would put it as a significant improvement.	1	A-6

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ORAL COMMENTS RECEIVED ON TAN GROUNDWATER SITES				
T3-2	Chuck Broscious	The one reservation that I have about the way the treated water is being discharged is that if, in fact, it has the concentrations of cesium—or Strontium-90 at 30 picocuries per liter, which is—I'm sorry, 300 picocuries per liter, which is almost 300 times the drinking water standard, being discharged into something that is universally recognized as a failed inadequate waste management approach, being the percolation pond, is just really distressing to see that that kind of continued practice is going on.	20	A-15
T3-3	Chuck Broscious	I would much rather see, as we've recommended in our written comments, that if indeed the treatment technology is not able to extract enough of the strontium to get it down to drinking water standards, then at least it should go into a lined evaporation pond.	27	A-20
T4-1	Tom Dechert	I guess what concerns me—I'm like Chuck, I appreciate the more open nature in the way that the information is being provided these days and the more complete nature of the data that's being provided.	1	A-6
T4-2	Tom Dechert	And similar to Chuck, I'm concerned about evaporation ponds, and not only for percolation reasons, but also for aerial dispersement problems that may occur if there are evaporation ponds. I'm not sure that those are addressed adequately any place or that the data is available, knowledge is available, to know exactly what's going to happen with that stuff in terms of aerial dispersement.	27, 28	A-20 A-21
T4-3	Tom Dechert	But in terms of the characterization of the site and the extent of contamination of this site, I have some concerns about that as well.	10	A-10
		In terms of the fact that just looking at your sampling scheme, for instance, for this water plume, I have a hard time seeing how you can have a high level or degree of confidence that you have adequately described the degree of contamination there.	10	A-10

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ORAL COMMENTS RECEIVED ON TAN GROUNDWATER SITES				
T4-3 (Cont.)	Tom Dechert	And I think by virtue of the fact that you're getting stuff back out of the injection well that you haven't seen before, you're seeing things that are surprising you as you go along, is an indication that there is some lack of understanding, I think, of degree of contamination in the aquifer, and not only that, but how the aquifer works at that site, or any place else, as far as that goes, under the INEL.		
T4-4	Tom Dechert	I'm not fully convinced that—what should I say—well, first off, having to do with the interbeds, that the characterization of those interbeds as you have described them and they were also described to me outside of this meeting can fully explain—if we're talking about basalt—what's going on with the containment of the contaminants that are down there. In other words, I would have—I just have a feeling that there's more to the interbeds, the silts and the clays, that are occurring in the aquifer, than you have a good handle on. And it disturbs me, I guess, that the models you use when you're looking at those or when you are describing those, what's going to happen with these plumes of these—the movement of contaminants in the future are based on assumptions of the clays, the silts and the basalts in the aquifers that I don't think are very well documented or very well substantiated in your database.	10	A-10

Code	Commentor	Comment	Comment/ Response	Page No.
WRITTEN COMMENTS RECEIVED ON TAN TRACK 1 NO ACTION SITES				
W1-5	Joseph W. Henscheid	I'm glad to see your resolution of the "No Action" sites.	32	A-22
W6-1	Donald Brice	Table 3, Page 14. How can risk-based soil concentrations calculated from 10^{-6} excess cancers be calculated for noncarcinogens?	30	A-21
W6-2	Donald Brice	Also, how can you have greater than one million parts per million solvent in soil? There are risks other than cancer. What about acute toxicity of solvents, explosion and fire hazard, and the hazard from instability of soils composed totally of solvents?	30	A-21
W6-3	Donald Brice	How can 46% benzene not be an inhalation hazard?	31	A-21
W7-1	Alan Merritt	LOFT-05 . . ."tanks and assoc. piping remain in place pending future use." Are you going to upgrade this system to current UST standards? If so, are you doing the equivalent of putting a new engine into a 40-year-old truck? Why not remove this old system and replace with a new double-contained system with leak detection that can be relied upon?	35	A-22
W7-2	Alan Merritt	TSF-39 sounds like this would be relatively easy to clean up and dispose of the asbestos cement with other asbestos at the CFA landfill.	36	A-23
W7-3	Alan Merritt	WRRTF-02-03-06 "Although no soil sampling has been conducted . . ." Why not collect some samples and be sure?	37	A-23

Code	Commentor	Comment	Comment/ Response	Page No.
ORAL COMMENTS RECEIVED ON TAN TRACK I NO ACTION SITES				
T1-6	C. E. White	I can't agree totally with my friend over here about the house basement, what have you.	OS	
T1-7	C. E. White	Most of the contamination—I'm even going as far as to say all of the contamination that was found on the ground or in that area, was not of a very deep nature. It was probably above four or five feet. Therefore, if you go down into the ground, you're not creating a dominant path, I don't think.	33	A-22
T1-8	C. E. White	I think your more dominant path is the way it's looked at because you're living in Idaho, and if you live in Idaho, you've got the wind. And this is going to be the greatest, I think, path of contaminant would be from the surface areas that would be stirred up by the wind or whatever.	34	A-22
T1-9	C. E. White	I can't—I agree with most of your other things, but I can't with that.	OS	
T2-2	Steve Novak	I feel that the indoor pathway should be addressed as well as the outdoor pathway. For several reasons. And I'll address Mr. White's comments. The fact that there is a lot of wind in Idaho probably decreases the outdoor pathway even more, because the concentration on the outdoor pathway most likely would be lower due to the fact that there is high wind, fresh air will bring and move contaminants away.	34	A-22
T2-3	Steve Novak	As far as the basement scenario, contaminants not only go through the basement, they go through the walls and the sides of the basement as well. So, usually, contamination anywhere from one to ten feet was a concern when you have a basement because it gets sucked into the basement in the pressure through the outside and the basement.	33	A-22
T2-4	Steve Novak	There is a large concern of radon. It's also a concern of volatiles: benzene, toluene, ethylbenzene, especially benzene which is more toxic than the other contaminants.	OS	
T3-4	Chuck Broscious	That was what I had underlined, too, the fact that it says here "although no soil sampling was conducted," "no soil sampling conducted," "although no soil sampling conducted," and it goes on and on. You know, good gosh, that doesn't sound to me like a very reasonable way to approach that kind of assessment.	37	A-23

Code	Commentor	Comment	Comment/ Response	Page No.
ORAL COMMENTS RECEIVED ON TAN TRACK 1 NO ACTION SITES				
T4-6	Tom Dechert	I just, as a comment, I think that those wastewater treatment or wastewater disposal sites, the soils should be sampled and fully analyzed, because I think the records are, you know, incomplete.	37	A-23

APPENDIX C

Administrative Record Index

Appendix C

Administrative Record

Test Area North Injection Well 07/14/94

File Number

Technical Evaluation

11.7

Document #: 5694
Title: Letter Report—Technical Evaluation of the TAN OU 1-07B RI/FS and Proposed Plan
Author: GeoTrans, Inc.
Recipient: EG&G Idaho, Inc.
Date: 11/30/93

R.12.1 **EPA Comments**

Document #: 5341
Title: Review Comments for Draft Remedial Investigation Report W/Addenda for the Test Area North Groundwater Operable Unit at the INEL
Author: Liverman, E.
Recipient: Green, L.
Date: 07/09/93

Document #: 5573
Title: Review of Draft Remedial Investigation/Feasibility Study for the Test Area North Groundwater Operable Unit 1-07B
Author: Liverman, E.
Recipient: Williams, A. C.
Date: 11/05/93

Document #: 5682
Title: Resolution of EPA's Comments on TAN OU 1-07B Draft Final RI/FS
Author: Pierre, W.
Recipient: Lyle, J. L.
Date: 01/26/94

Document #: 5697
Title: Review of Draft Final Remedial Investigation/Feasibility Study for the Test Area North Groundwater Operable Unit 1-07B
Author: Liverman, E.
Recipient: Green, L.
Date: 01/12/94

Document #: 5698
Title: Review of Draft Proposed Plan for the Test Area North Groundwater Operable Unit 1-07B
Author: Liverman, E.
Recipient: Harelson, D. B., English, M.
Date: 03/28/94

Test Area North Injection Well 07/14/94

File Number

AR12.2 **IDHW Comments**

Document #: 5340
Title: Review of the Draft Remedial Investigation Report for Operable Unit (OU) 1-07B
Author: English, M.
Recipient: Green, L.
Date: 07/02/93

Document #: 5574
Title: Review of the Draft Remedial Investigation/Feasibility Study for Operable Unit 1-07B
Author: English, M.
Recipient: Williams, A. C.
Date: 10/29/93

Document #: 5683
Title: Review of the Draft Proposed Plan Operable Unit (OU) 1-07B
Author: English, M.
Recipient: Green, L.
Date: 03/14/94

Document #: 5699
Title: Review of the Draft Final Remedial Investigation Feasibility Study (RI/FS) for Operable Unit (OU) 1-07B
Author: English, M.
Recipient: Green,L.
Date: 01/11/94

AR12.4

Document #: 5684
Title: TAN OU 1-07B Draft Final RI/FS Report
Author: Nygard, D.
Recipient: Lyle, J. L.; Pierre, W.
Date: 01/28/94